

Title (en)

METHOD FOR DETERMINING THE INSTANTANEOUS MASS FLOW RATE OF A GAS, CORRESPONDING DEVICE AND COMPUTER PROGRAM

Title (de)

Verfahren zur Bestimmung der momentanen Massendurchflussrate eines Gases, zugehörige Vorrichtung und Computerprogramm

Title (fr)

Procédé pour déterminer le débit massique momentané d'un gaz, dispositif et programme informatique correspondants

Publication

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Application

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Priority

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Abstract (en)

The invention relates to a method and device for determining the instantaneous mass flow of a gas, such as air in a conduit (12), like an air intake channel of an internal combustion engine of a motor vehicle. The method comprises the steps of: - measuring (81) a time-domain signal of gas pressure at a first measurement point (A) of said conduit (12); - measuring (82) a time-domain signal of gas pressure at a second measurement point (B) of said conduit (12). According to the invention, said method further comprises the steps of: - obtaining (83) for each of the measured time-domain signals of gas pressure the corresponding frequency spectrum ; - obtaining (84) the frequency spectrum of the mass flow at each of said measurement points (A, B) using a model in the frequency domain linking the frequency spectrum of the measured gas pressure at said measurement points (A, B) to the frequency spectrum of the mass flow at said measurement points (A, B) ; - obtaining (85) the time-domain signal of the mass flow rate at any measurement point (A, B) from the frequency spectrum of the mass flow at said corresponding measurement point (A, B).

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Citation (applicant)

WO 2009118290 A1 20091001 - CENTRE NAT RECH SCIENT [FR], et al

Citation (search report)

- [X] DE 102005007057 A1 20060824 - FEV MOTORENTECH GMBH [DE], et al
- [A] US 2012101745 A1 20120426 - KOHNO YASUSHI [JP], et al
- [A] DE 102009027010 A1 20101223 - BOSCH GMBH ROBERT [DE]
- [A] DE 102004010903 B3 20050908 - SIEMENS AG [DE]
- [A] DE 10125166 A1 20021205 - VOLKSWAGEN AG [DE]

Cited by

CN109359418A; US11365699B2; CN109653890A; CN113283044A

Designated contracting state (EPC)

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